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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
SAIDHA, TEKCHAND	

ART UNIT	PAPER NUMBER
1652	

DATE MAILED: 09/30/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/806,701	ARKHAMMAR ET AL.	
	Examiner	Art Unit	
	Tekchand Saidha	1652	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *04 April 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-10* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-10* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on _____ is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☒ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. The Preliminary Amendment dated April 4, 2001 [entered IFW July 17, 2001] is acknowledged. Claims 1-10 are pending and under consideration in this examination.

2. ***Priority***

Acknowledgment is made of applicants' claim for priority based on an applications filed in Denmark on 10.15.1998. It is noted, however, that applicant has not filed a certified copy of the PA 1998 01322 application as required by 35 U.S.C. 119(b).

Certified copies of PA 1998 01321 and PA 1998 01323 have been received.

3. ***Specification***

The specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

4. ***Enablement***

Claims 1-7 & 9-10 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for a method of targeting and redistribution of an I-kappaβ kinase using a molecular probe comprising a fusion of SEQ ID NO: 16 (amino acids 331-360) and a green fluorescent protein [or IKK-GFP fusion protein; or IKK variants-GFP fusion protein] which upon expression in CHO cell(s) will dislocate endogenous IKK from its anchoring site, and processing the recorded variation in the spatially distributed light to provide quantitative information correlating the variation in spatial distributed light with the effect of the expression of the probe, does not reasonably provide enablement for finding any compound or probe construct comprising a

fluorescent probe having at least a part of the sequence of I-kappa kinase, or a functional analog of *Aequorea* GFP that modulates targeting and redistribution of an I-kappa kinase in any intact living cell(s).

The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the invention commensurate in scope with the claims. Factors to be considered in determining whether undue experimentation is required, are summarized in In re Wands (858 F2d 731, 737, 8 USPQ2d 1400, 1404 (Fed. Cir. 1988))[*Ex parte* Forman [230 USPQ 546 (Bd. Pat. App. & Int. 1986)]. The Wands factors are: (a) the quantity of experimentation necessary, (b) the amount of direction or guidance presented, (c) the presence or absence of working example, (d) the nature of the invention, (e) the state of the prior art, (f) the relative skill of those in the art, (g) the predictability or unpredictability of the art, and (h) the breadth of the claim. The factors most relevant to this rejection are [the scope of the claims, unpredictability in the art, the amount of direction or guidance presented, and the amount of experimentation necessary].

The specification discloses fusion protein construct(s) using C-terminal portion of IKK or IKK variants and GFP or GFP variants (see claim 4 & 6) in the method/assay of claims 1-7 & 9-10. However, the claimed method/assay are drawn to 'finding a compound', that can be used in the method. The claims are not enabled for such a method. This because the method in question is not a standard method/assay system, as in the case of an enzyme assay, wherein addition of compound(s) may indicate if the added compound is a modulator (activator/inhibitor) of the enzyme. The method comprises modulation of the specific effectiveness of IKKS by modulating their spatial distribution within cells of the animal. Therefore each method would be unique in using the appropriate construct [polypeptide-GFP] specific to the cellular enzyme in question, and which enzyme is being targeted and redistributed. As in the instant case IKK-GFP (compound) targets and redistributes IKK in intact living

cell(s). So it will be a method to evaluate the effectiveness of fusion protein construct (or compound), rather than a method of finding a compound that 'modulates'.

Thus the claims are directed to a method specifically using encompass enormous numbers of compounds expected to be inoperative in a method trying to achieve modulation of the target of specific isoforms of IKK by reducing their specific effectiveness, not their enzymatic capacity [See instant specification pages 1-2]. Since it is not routine in the art to develop a simplified protocol of assessing any compound in a complex comprising numerous cellular pathways [See instant specification, background, pages 3-13] where the expectation "of success is unpredictable", the skilled artisan would require additional guidance in order to make and use the claimed method in a manner reasonably commensurate with the scope of the claims. Without such guidance, the experimentation left to those skilled in the art is undue.

5. ***Written Description***

Claims 1-7 & 9-10 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claims 1-7 & 9-10 are directed to a method of finding any compound or probe construct comprising a fluorescent probe having at least a part of the sequence of I-kappa kinase that modulates targeting and redistribution of an I-kappa kinase in any intact living cell(s), the claimed genus.

The specification describes a few species in a method of targeting and redistribution of an I-kappaβ kinase using a molecular probe comprising a fusion of SEQ ID NO: 16 (amino acids 331-360) and a green fluorescent protein [or IKK-GFP fusion protein; or IKK variants-GFP fusion protein] which upon expression in CHO cell(s) will dislocate endogenous IKK from its anchoring site, and processing the recorded variation in the spatially distributed light to provide quantitative information correlating the variation in spatial distributed light with the effect of the expression of the probe.

The specification does not describe a representative number of species to the genus. A representative number of species requires that the species which are expressly described be representative of the entire genus. Thus, when there is substantial variation within the genus, it may require a description of the various species which reflect the variation within the genus. In the instant case, however, the description of a few species is not representative of the entire genus This is because the method in question is not a standard method/assay system, as in the case of an enzyme assay, wherein addition of compound(s) may indicate if the added compound is a modulator (activator/inhibitor) of the enzyme. The method comprises modulation of the specific effectiveness of IKKS by modulating their spatial distribution within cells of the animal. Therefore each method would be unique in using the appropriate construct [polypeptide-GFP] specific to the cellular enzyme in question, and which enzyme is being targeted and redistributed. As in the

instant case IKK-GFP (compound) targets and redistributes IKK in intact living cell(s). So it will be a method to evaluate the effectiveness of fusion protein construct (or compound), rather than a method of finding a compound that 'modulates'.

In such a case, where the members of the genus being claimed are expected to vary widely in their identifying characteristics, such as structure or enzyme activity or appropriate construct [polypeptide-GFP] specific to the cellular enzyme in question, and which enzyme is being targeted and redistributed, written description for each member within the genus will be necessary. Therefore, the written description requirement is not satisfied.

6. ***Claim Rejections - 35 USC § 112*** (second paragraph)

Claim 10 is rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 10 is directed to a screening assay for carrying out the method of claim 1. The claim is indefinite because it is unclear as to what is being screened [and steps if any] for use in claim 1. Clarification is required to overcome this rejection.

7. Claim 3 is rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 3 recites 'functional analog thereof'. The claim is indefinite because it is not clear what a 'functional analog' is ? and the specification does not define or teach how to make such an analog.

Claim 3 also recites 'position 1 upstream from the chromophore..'. The claim is indefinite because it is unclear about position 1, as no reference

sequence is identified by the corresponding sequence identifier number or SEQ ID NO:

8. Claims 1-10 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites 'a method of finding a compound that modulates targeting .....'. The claim is indefinite because it is not clear if the "fusion construct" is the "compound", or some other compound is added in the assay apart from the "fusion construct". This appears to be a method to evaluate the effectiveness of fusion protein construct, rather than a method of finding a compound that 'modulates'.

Claims 2-10 are included in the rejection for failing to correct the defect present in the base claim(s).

9. ***Double Patenting***

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-10 are rejected under the judicially created doctrine of double patenting over claims 1-88 of U. S. Patent No. 6,518,021 since the claims, if allowed, would improperly extend the "right to exclude" already granted in the patent.

The subject matter claimed in the instant application is fully disclosed in the patent and is covered by the patent since the patent and the application are claiming common subject matter, as follows:

U. S. Patent No. 6,518,021, claims 1-88, are also drawn to a method of finding [or detecting] a compound that modulates targeting [or translocation of a component] by measuring the light emitted from the luminophore. No difference is seen between the two method in view of unclear nature of the method steps [see item 8 above]. Thus the applicants are seeking a narrower scope (species) in the instantly presented claims versus the genus already patented [method for detection..... using a nucleotide sequence encoding a hybrid polypeptide comprising a luminophore linked to a (any) biological active polypeptide]. Since a species anticipates the genus & genus obviates a species, the patented genus claims of U.S. Patent No. 6,518,021 obviates the instantly claimed species claims.

10. No claim is allowed.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tekchand Saidha whose telephone number is (571) 272 0940. The examiner can normally be reached on 8.30 am - 5.00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ponnathapu Achutamurthy can be reached on (571)

272 0928. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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